WHAT IS CLAIMED IS:

1. A magnetic memory comprising:

a magnetoresistance effect element having a magnetic recording layer;

a first wiring extending in a first direction on or below the magnetoresistance effect element;

a covering layer provided at least both sides of the first wiring, the covering layer being made of magnetic material, and the covering layer having a uniaxial anisotropy in the first direction along which a magnetization of the covering layer occurs easily; and

a writing circuit configured to pass a current through the first wiring in order to record an information in the magnetic recording layer by a magnetic field generated by the current.

2. A magnetic memory according to claim 1, wherein a total length of the covering layer along a circumference direction of the first wiring is equal to or smaller than one micrometer.

3. A magnetic memory according to claim 1, wherein a thickness of the covering layer is equal to or smaller than 0.05 micrometer.

4. A magnetic memory according to claim 1, wherein the covering layer is divided into a plurality of parts, the parts being parallel to each other and extending in the first direction.

5. A magnetic memory according to claim 1, wherein a layer made of an antiferromagnetic material is laminated with the covering layer.

6. A magnetic memory according to claim 1, wherein the covering layer has a projecting part which projects toward the magnetoresistance effect element from the first wiring.

7. A magnetic memory according to claim 1, wherein the covering layer has a divided part which is provided separate from a part of the covering layer adjoining the first wiring, and the divided part being provided close to the magnetoresistance effect element.

8. A magnetic memory according to claim 1, wherein the covering layer is made of a material selected from the group consisting of nickel-iron alloy, cobalt-nickel alloy, cobalt-iron-nickel alloy, alloy of cobalt and at least one of zirconium, hafnium, niobium, tantrum and titanium, amorphous alloy of a (Co, Fe, Ni)-(Si, B)-(P, Al, Mo, Nb, Mn)-system, a nano-granular metal-nonmetal material of a (Fe, Co)-(B, Si, Hf, Zr, Sm, Ta, Al)-(F, O, N)-system, and an insulative ferrite.

9. A magnetic memory according to claim 1, further comprising a conductive layer adjoining an outer side of the covering layer taken from the first wiring and being made of a conductive nonmagnetic material.

10. A magnetic memory according to claim 9, wherein the

conductive nonmagnetic material includes copper as its main component.

11. A magnetic memory according to claim 1, wherein the covering layer is made of a magnetic material having a crystal magnetic anisotropy constant K1 equal to or smaller than 5×10^4 erg/cc.

12. A magnetic memory comprising:

a first wiring extending in a first direction;

a magnetoresistance effect element provided on the first wiring and having a magnetic recording layer;

a second wiring extending in a direction across the first direction on the magnetoresistance effect element;

a covering layer provided on at least both sides of at least one of the first and second wirings, the covering layer being made of magnetic material, and the covering layer having a uniaxial anisotropy in a lengthwise direction of the wiring on which the covering layer is provided, along the lengthwise direction a magnetization of the covering layer occurring easily; and

a writing circuit configured to pass currents through the first and second wirings in order to record one of two values of two-valued information in the magnetic recording layer by magnetic fields generated by the currents.

13. A magnetic memory according to claim 12, wherein a total length of the covering layer along a circumference direction of the wiring

on which the covering layer is provided is equal to or smaller than one micrometer.

14. A magnetic memory according to claim 12, wherein a thickness of the covering layer is equal to or smaller than 0.05 micrometer.

15. A magnetic memory according to claim 12, wherein the covering layer is divided into a plurality of parts, the parts being parallel to each other and extending in a lengthwise direction of the wiring on which the covering layer is provided.

16. A magnetic memory according to claim 12, wherein a layer made of an antiferromagnetic material is laminated with the covering layer.

17. A magnetic memory according to claim 12, wherein the covering layer is provided on each of the first and second wirings, a first layer made of an antiferromagnetic material having a first blocking temperature is laminated with the covering layer provided on the first wiring, a second layer made of an antiferromagnetic material having a second blocking temperature different from the first blocking temperature is laminated with the covering layer provided on the second wiring

18. A magnetic memory according to claim 12, wherein the

covering layer has a projecting part which projects toward the magnetoresistance effect element from the wiring on which the covering layer is provided.

19. A magnetic memory according to claim 12, wherein the covering layer has a divided part which is provided separate from a part of the covering layer adjoining the wiring, and the divided part being provided close to the magnetoresistance effect element.

20. A magnetic memory according to claim 12, wherein the covering layer is made of a material selected from the group consisting of nickel-iron alloy, cobalt-nickel alloy, cobalt-iron-nickel alloy, alloy of cobalt and at least one of zirconium, hafnium, niobium, tantrum and titanium, amorphous alloy of a (Co, Fe, Ni)-(Si, B)-(P, Al, Mo, Nb, Mn)-system, a nano-granular metal-nonmetal material of a (Fe, Co)-(B, Si, Hf, Zr, Sm, Ta, Al)-(F, O, N)-system, and an insulative ferrite.

21. A magnetic memory according to claim 12, wherein the covering layer is made of a magnetic material having a crystal magnetic anisotropy constant K1 equal to or smaller than 5×10^4 erg/cc.

22. A magnetic memory according to claim 12, further comprising a conductive layer adjoining an outer side of the covering layer taken from the adjoining wiring and being made of a conductive nonmagnetic material.

23. A magnetic memory according to claim 22, wherein the conductive nonmagnetic material includes copper as its main component.

24. A magnetic memory comprising:

a first wiring extending in a first direction;

a magnetoresistance effect element provided on the first wiring and having a magnetic recording layer;

a second wiring extending in a direction across the first direction on the magnetoresistance effect element;

a covering layer provided on at least both sides of at least one of the first and second wirings, the covering layer being made of magnetic material

a conductive layer adjoining an outer side of the covering layer taken from the adjoining wiring and being made of a conductive nonmagnetic material; and

a writing circuit configured to pass currents through the first and second wirings in order to record one of two values of two-valued information in the magnetic recording layer by magnetic fields generated by the currents.

25. A magnetic memory according to claim 24, wherein the conductive nonmagnetic material includes copper as its main component.

26. A magnetic memory according to claim 24, wherein the

covering layer is made of a magnetic material having a crystal magnetic anisotropy constant K1 equal to or smaller than 5×10^4 erg/cc.

27. A magnetic memory according to claim 24, wherein a layer made of an antiferromagnetic material is laminated with the covering layer.